MINOR SOURCE OPERATING PERMIT
OFFICE OF AIR QUALITY

Forest River, Incorporated
Plant 1 - 58277 State Road 19 South
Plant 2 - 27824 County Road 20
Elkhart, Indiana 46517

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 039-10341-00295	
Issued by: Original signed by Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: June 12, 2001 Expiration Date: June 12, 2006

TABLE OF CONTENTS

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary towable and motorized recreational vehicle manufacturing facility.

Authorized Individual:	Peter Liegl
Source Address:	Plant 1 - 58277 State Road 19 South, Elkhart, IN 46517 Plant 2 - 27824 County Road 20, Elkhart, IN 46517
Mailing Address:	58277 State Road 19 South, Elkhart, IN 46517
Phone Number:	(219) 533-5934
SIC Code:	3716, 3792
County Location:	Elkhart
County Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Minor Source, under PSD Minor Source, Section 112 of the Clean Air Act

A.2 Emissions units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

Plant 1 consists of the following emission units:

(a) One (1) recreational vehicle (RV) Assembly Line, manufacturing 1.375 RVs per hour;

(b) One (1) surface coating spray booth, identified as Plastic Skirt and Touch-up Paint Booth, utilizing an air atomization or HVLP spray application system, coating a maximum of 1.375 RV skirts (plastic) per hour; and

(c) One (1) body putty application process, identified as Paint Prep Shop, applying putty to a maximum of 1.375 RVs per hour.

Insignificant Activities

(d) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour;

(e) One (1) foam seal shop, extruding urethane foam sealant into the cavities of plastic RV bodies; and

(f) One (1) woodworking operation, identified as Cabinet Shop, with a maximum process weight rate of 500 pounds of lumber per hour, equipped with one (1) cyclone for particulate matter control.

Plant 2 consists of the following emission units:

(g) Five (5) metal inert gas (MIG) welding stations and one (1) stick welding station, both with a maximum process weight rate of 759 pounds per hour; and

(h) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour.

SECTION B GENERAL CONSTRUCTION CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

B.1 Permit No Defense [IC 13]

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.5 Modification to Permit [326 IAC 2]

Notwithstanding the Section B condition entitled “Minor Source Operating Permit”, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.6 Permit Term [326 IAC 2-6.1-7]

This permit is issued for a fixed term of five (5) years form the original date, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

C.1 PSD Minor Source Status [326 IAC 2-2] [40 CFR 52.21]

(a) The total source potential to emit of all criteria pollutants is less than 250 tons per year. Therefore the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.

(b) Any change or modification which may increase potential to emit to 250 tons per year from this source, shall cause this source to be considered a major source under PSD, 326 IAC 2-2 and 40 CFR 52.21, and shall require approval from IDEM, OAQ prior to making the change.

C.2 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) after issuance of this permit, including the following information on each emissions unit:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

(b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) PMP's shall be submitted to IDEM, OAQ, upon request and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

C.3 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

(a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "authorized individual" as defined by 326 IAC 2-1.1-1.

(c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

C.4 Inspection and Entry [326 IAC 2-7-6(2)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a permitted source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under this title or the conditions of this permit or any operating permit revisions;

(c) Inspect, at reasonable times, any processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;

(d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

C.5 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)] :

(a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.

(b) The written notification shall be sufficient to transfer the permit to the new owner by an notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).

(c) IDEM, OAQ, shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

C.6 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to operate may be revoked for any of the following causes:

(a) Violation of any conditions of this permit.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.

(d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

(e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.7 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

C.8 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.9 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3.

Testing Requirements

C.10 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

(a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

(b) All test reports must be received by IDEM, OAQ within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

Compliance Monitoring Requirements

C.11 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.12 Maintenance of Monitoring Equipment [IC 13-14-1-13]

(a) In the event that a breakdown of the monitoring equipment occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem. To the extent practicable, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less frequent than required in Section D of this permit until such time as the monitoring equipment is back in operation. In the case of continuous monitoring, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less than one (1) hour until such time as the continuous monitor is back in operation.

(b) The Permittee shall install, calibrate, quality assure, maintain, and operate all necessary monitors and related equipment. In addition, prompt corrective action shall be initiated whenever indicated.

C.13 Monitoring Methods [326 IAC 3]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

C.14 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 1-6]

(a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:

(1) This condition;

(2) The Compliance Determination Requirements in Section D of this permit;

(3) The Compliance Monitoring Requirements in Section D of this permit;

(4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this permit; and

(5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of :

(A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and

(B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.

(b) For each compliance monitoring condition of this permit, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the permit unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.

(c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:

(1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.

(2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied or;

(3) An automatic measurement was taken when the process was not operating; or

(4) The process has already returned to operating within "normal" parameters and no response steps are required.

(d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken.

Record Keeping and Reporting Requirements

C.15 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.

(b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.16 Annual Emission Statement [326 IAC 2-6]

(a) The Permittee shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall meet the following requirements:

(1) Indicate actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);

(2) Indicate actual emissions of other regulated pollutants from the source, for purposes of Part 70 fee assessment.

(b) The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 30. The annual emission statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

(c) The annual emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

The submittal by the Permittee does require the certification by the “authorized individual” as defined by 326 IAC 2-1.1-1.

C.17 Monitoring Data Availability [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) With the exception of performance tests conducted in accordance with Section C-Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.

(b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.

(c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.

(d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.

(e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.

(f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.18 General Record Keeping Requirements [326 IAC 2-6.1-2]

(a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAQ, representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Records of required monitoring information shall include, where applicable:

(1) The date, place, and time of sampling or measurements;

(2) The dates analyses were performed;

(3) The company or entity performing the analyses;

(4) The analytic techniques or methods used;

(5) The results of such analyses; and

(6) The operating conditions existing at the time of sampling or measurement.

(c) Support information shall include, where applicable:

(1) Copies of all reports required by this permit;

(2) All original strip chart recordings for continuous monitoring instrumentation;

(3) All calibration and maintenance records;

(4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.

(d) All record keeping requirements not already legally required shall be implemented when operation begins.

C.19 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(b) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period. The report does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:

(1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or

(2) A malfunction as described in 326 IAC 1-6-2; or

(3) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.

(4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.

(d) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.

(e) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

C.20 Annual Notification [326 IAC 2-6.1-5(a)(5)]

(a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.

(b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.

(c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Compliance Data Section, Office of Air Quality
Indiana Department of Environmental Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

(d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description
Plant 1 consists of the following emission units:
(a) One (1) recreational vehicle (RV) Assembly Line, manufacturing 1.375 Rvs per hour;
(b) One (1) surface coating spray booth, identified as Plastic Skirt and Touch-up Paint Booth, utilizing an air atomization or HVLP spray application system, coating a maximum of 1.375 RV skirts (plastic) per hour; and
(c) One (1) body putty application process, identified as Paint Prep Shop, applying putty to a maximum of 1.375 RVs per hour.
(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.1.1 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

(a) Pursuant to 326 IAC 8-1-6 (New Facilities, General Reduction Requirements), the Best Available Control Technology (BACT) for the one (1) Assembly Line, shall be the following limitation and the work practice standards:

The VOC usage for the one (1) Assembly Line, shall be limited to 52 tons per twelve (12) consecutive month period.

Forest River will apply all sealants, adhesives, and cleaners with extrusion ("squeeze tubes"), brushing, and hand wiping techniques.

Minor amounts of paint will be applied using aerosol spray cans which is a form of airless spray technology.

Employees will close open containers when not in use.

(b) Any change or modification which would increase the potential to emit VOC from the one (1) surface coating spray booth, identified as Plastic Skirt and Touch-up Paint Booth to twenty-five (25) tons per year or more, shall obtain prior approval from IDEM, OAQ and shall be subject to the requirements of 326 IAC 8-1-6.

D.1.2 Particulate Matter (PM) [326 IAC 6-3-2(c)]

(a) The particulate matter (PM) from the one (1) surface coating spray booth, identified as Plastic Skirt and Touch-up Paint Booth and the particulate mater (PM) from the Assembly Line (when spraying paint from cans only) shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

(b) The particulate matter (PM) from the one (1) body putty application process, identified as Paint Prep Shop, shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

$E = 4.10\ (15.8)^{0.67} = 26.05$ lbs PM/hr

Based on the above equation, particulate matter emissions from the one (1) body putty application process, identified as Paint Prep Shop, shall be limited to 26.05 pounds per hour.

D.1.3 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for these emissions units.

Compliance Determination Requirements

D.1.4 Testing Requirements [326 IAC 2-1.1-11]

The Permittee is not required to test this emissions unit by this permit. However, IDEM may require compliance testing when necessary to determine if the emissions unit is in compliance. If testing is required by IDEM, compliance with the VOC limit specified in Condition D.1.1(a) shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.1.5 Volatile Organic Compounds (VOC)

Compliance with the VOC content and usage limitations contained in Condition D.1.1 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) using formulation data supplied by the coating manufacturer. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.1.6 VOC Emissions

Compliance with Condition D.1.1(a) shall be demonstrated within 30 days of the end of each month based on the total volatile organic compound usage for the most recent twelve (12) month period.

Compliance Monitoring Requirements

D.1.7 Particulate Matter (PM)

The dry filters for particulate matter overspray control shall be properly in place and maintained to ensure integrity and particulate loading of the filters at all times when the booths are in operation.

D.1.8 Monitoring

(a) The Permittee shall implement an operator-training program.

(1) All operators that perform spray operations or booth maintenance shall be trained in the proper set-up and operation of the particulate matter control system. All existing operators shall be trained within 60 days of the issuance of this permit. All new operators shall be trained upon hiring or transfer.

(2) Training shall include proper filter alignment, filter inspection and maintenance, and trouble shooting practices. The training program shall be written and retained on site. The training program shall include a description of the methods to be used at the completion of initial and refresher training to demonstrate and document successful completion. Copies of the training program, list of trained operators and training records shall be maintained on site or available within 1 hour for inspection by IDEM.

(3) All operators shall be given refresher training annually.

(b) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.1.9 Record Keeping Requirements

(a) To document compliance with Condition D.1.1(a), the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC and HAP usage limits and/or the VOC and HAP emission limits established in Condition D.1.1(a).

(1) The amount and VOC and HAP content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;

(2) A log of the dates of use;

(3) The cleanup solvent usage for each month;

(4) The total VOC and HAP usage for each month; and

(5) The weight of VOCs and HAPs emitted for each compliance period.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description

Insignificant Activities
(d) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour;
(e) One (1) foam seal shop, extruding urethane foam sealant into the cavities of plastic RV bodies; and
(f) One (1) woodworking operation, identified as Cabinet Shop, with a maximum process weight rate of 500 pounds of lumber per hour, equipped with one (1) cyclone for particulate matter control.

Plant 2 consists of the following emission units:
(g) Five (5) metal inert gas (MIG) welding stations and one (1) stick welding station, both with a maximum process weight rate of 759 pounds per hour; and
(h) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.2.1 Particulate Matter (PM) [326 IAC 6-3]

(a) The particulate matter (PM) from the woodworking operation, identified as Cabinet Shop shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

$E = 4.10\ (0.25)^{0.67} = 1.62$ lbs PM/hr

Based on the above equation, particulate matter emissions from the woodworking operation shall be limited to 1.62 pounds per hour for a maximum process rate of 500 pounds per hour.

(b) The particulate matter (PM) from the welding operation shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

$E = 4.10\ (0.3795)^{0.67} = 2.14$ lbs PM/hr

Based on the above equation, particulate matter emissions from the welding operation shall be limited to 2.14 pounds per hour for a maximum process rate of 759 pounds per hour.

D.2.2 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for these emissions units.

Compliance Determination Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.2.3 Testing Requirements [326 IAC 2-1.1-11]

The Permittee is not required to test this emissions unit by this permit. However, IDEM may require compliance testing when necessary to determine if the emissions unit is in compliance. If testing is required by IDEM, compliance with the limit specified in Condition D.2.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.2.4 Particulate Matter (PM)

The cyclone for PM control shall be in operation at all times when the One (1) woodworking operation, identified as Cabinet Shop, is in operation.

Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.2.5 Cyclone Inspections

An inspection shall be performed each calender quarter of all cyclones controlling the woodworking operation when venting to the atmosphere. A cyclone inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting to the indoors.

D.2.6 Cyclone Failure Detection

In the event that cyclone failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions). Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	Forest River, Incorporated
Address:	58277 State Road 19 South and 27824 County Road 20, Elkhart, IN 46517
City:	Elkhart
Phone #:	(219) 533-5934
MSOP #:	039-10341-00295

I hereby certify that Forest River, Incorporated is **9** still in operation.
9 no longer in operation.

I hereby certify that Forest River, Incorporated is
9 in compliance with the requirements of MSOP 039-10341-00295
9 not in compliance with the requirements of MSOP 039-10341-00295

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
FAX NUMBER - 317 233-5967

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY:_____PHONE NO. ( )_____
LOCATION: (CITY AND COUNTY)_____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____INSP:_____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND
REASON:_____
_____

DATE/TIME MALFUNCTION STARTED: _____/_____/ 20____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE_____/_____/ 20____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER:_____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

_____

MEASURES TAKEN TO MINIMIZE EMISSIONS:_____

_____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES:_____
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS:_____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT:_____
INTERIM CONTROL MEASURES: (IF APPLICABLE)_____
_____
_____

MALFUNCTION REPORTED BY:_____TITLE:_____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY:_____DATE:_____TIME:_____

*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1.This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

_____

_____

Indiana Department of Environmental Management
Office of Air Management

Addendum to the
Technical Support Document for a Minor Source Operating Permit (MSOP)

Source Name: Forest River, Incorporated
Source Location: Plant 1 - 58277 State Road 19 South, Elkhart, IN 46517
Plant 2 - 27824 County Road 20, Elkhart, IN 46517
SIC Code: 3716, 3792
County: Elkhart
Operation Permit No.: MSOP 039-10341-00295
Permit Reviewer: NH/EVP

On April 12, 2001, the Office of Air Management (OAM) had a notice published in the Elkhart Truth, Elkhart, Indiana, stating that Forest River, Incorporated had applied for a Minor Source Operating Permit (MSOP) for the operation of a towable and motorized recreational vehicle manufacturing facility. The notice also stated that OAM proposed to issue a MSOP for this operation and provided information on how the public could review the proposed MSOP and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this MSOP should be issued as proposed.

On April 23, 2001, Ken L. DeRolf, Director of Consulting of DECA submitted comments on behalf of Forest River, Incorporated on the proposed MSOP. The summary of the comments and corresponding responses is as follows (**bolded** language has been added, the language with a ~~line~~ through it has been deleted):

Comment 1

D.1 (a) Comment:

The assembly line is separate from any paint shop. The paint booth should be deleted from this description. The assembly operations are a stand alone emission unit (facility) where the RVs are assembled and various sealants, adhesives, cleaners, and paints are used as indicated on Form PI-19 and supplements, and the BACT submitted on August 25, 1998.

Change (a) to read - The recreational vehicle (RV) Assembly Line, manufacturing 1.375 RVs per hour.

D.1 (b) Comment:

The New Paint Booth identification should be changed to “Plastic Skirt Paint Booth” because “new” is a vague and rather relative description.

Change (b) to read - One plastic skirt surface coating and paint touch-up paint booth ..... with dry filters controlling over-spray. The company requests that operator training be used to train employees on proper placement and changing of the dry filters, in place of the daily, weekly, and monthly observations and record keeping of the dry filters and visible emissions.

D.1 (c) Comment

The paint booth associated with the Cabinet Shop has been discontinued.

Change (c) - Remove this emission unit in it's entirety

Response 1

The following changes have been made to Section A.2 and to the facility description box in Section D.1.

A.2 Emissions units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

Plant 1 consists of the following emission units:

(a) ~~One (1) surface coating spray booth, identified as Assembly Line, utilizing an air atomization, a HVLP and an air airless spray application system, coating a maximum of 1.375 RVs per hour;~~ **One (1) recreational vehicle (RV) Assembly Line, manufacturing 1.375 RVs per hour;**

(b) One (1) surface coating spray booth, identified as ~~New Paint Shop~~ **Plastic Skirt and Touch-up Paint Booth**, utilizing an air atomization or HVLP spray application system, coating a maximum of 1.375 RV skirts (plastic) per hour;

~~(c) One (1) surface coating spray booth, identified as Cabinet Shop Paint Booth, utilizing a HVLP spray application system, coating a maximum of 1.375 RV wood cabinets per hour;~~

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description
Plant 1 consists of the following emission units:
(a) ~~One (1) surface coating spray booth, identified as Assembly Line, utilizing an air atomization, a HVLP and an air airless spray application system, coating a maximum of 1.375 RVs per hour;~~ **One (1) recreational vehicle (RV) Assembly Line, manufacturing 1.375 Rvs per hour;**
(b) One (1) surface coating spray booth, identified as ~~New Paint Shop~~ **Plastic Skirt and Touch-up Paint Booth**, utilizing an air atomization or HVLP spray application system, coating a maximum of 1.375 RV skirts (plastic) per hour;
~~(c) One (1) surface coating spray booth, identified as Cabinet Shop Paint Booth, utilizing a HVLP spray application system, coating a maximum of 1.375 RV wood cabinets per hour;~~
(~~d~~**c**) One (1) body putty application process, identified as Paint Prep Shop, applying putty to a maximum of 1.375 RVs per hour;
(~~e~~**d**) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour; and
(~~f~~**e**) One (1) foam seal shop, extruding urethane foam sealant into the cavities of plastic RV bodies.
(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

The facility description box in Section D.2 will be re-numbered accordingly.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description
(~~g~~**f**) One (1) woodworking operation, identified as Cabinet Shop, with a maximum process weight rate of 500 pounds of lumber per hour, equipped with one (1) cyclone for particulate matter control.
Plant 2 consists of the following emission units:
(~~h~~**g**) Five (5) metal inert gas (MIG) welding stations and one (1) stick welding station, both with a maximum process weight rate of 759 pounds per hour.
(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

The calculations worksheet for the Cabinet Shop Paint Booth in TSD Appendix A has been deleted. The rest of the calculation worksheets have been updated and re-numbered and are attached.

An operator training program will be added to Section D.1. Any filter problem is an automatic deviation.

Compliance Monitoring Requirements

D.1.7 Particulate Matter (PM)

The dry filters for particulate matter overspray control shall be properly in place and maintained to ensure integrity and particulate loading of the filters at all times when the booths are in operation.

D.1.8 Monitoring

(a) The Permittee shall implement an operator-training program.

(1) All operators that perform spray operations or booth maintenance shall be trained in the proper set-up and operation of the particulate matter control system. All existing operators shall be trained within 60 days of the issuance of this permit. All new operators shall be trained upon hiring or transfer.

(2) Training shall include proper filter alignment, filter inspection and maintenance, and trouble shooting practices. The training program shall be written and retained on site. The training program shall include a description of the methods to be used at the completion of initial and refresher training to demonstrate and document successful completion. Copies of the training program, list of trained operators and training records shall be maintained on site or available within 1 hour for inspection by IDEM.

(3) All operators shall be given refresher training annually.

(b) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Comment 2

D.1 (d) Comment

Description is correct.

Response 2

No changes have been made to the permit as a result of this comment.

Comment 3

D.1 (e) and (f) Comment and Change Request

The wall and roof assembly lamination process and the foam seal shop have been demonstrated to be insignificant and should be removed from this heading and listed under a new heading for Insignificant Activities. It is also requested that other insignificant facilities be listed under an Insignificant Activities heading. In addition to the above insignificant activities the following should also be included:

1. Welding stations as listed in D.2 (h)
2. Cabinet Shop Woodworking as listed in D.2 (g)

Response 3

The following revisions have been made to Section A.2.

A.2 Emissions units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

Plant 1 consists of the following emission units:

(a) ~~One (1) surface coating spray booth, identified as Assembly Line, utilizing an air atomization, a HVLP and an air airless spray application system, coating a maximum of 1.375 RVs per hour;~~ **One (1) recreational vehicle (RV) Assembly Line, manufacturing 1.375 RVs per hour;**

(b) One (1) surface coating spray booth, identified as ~~New Paint Shop~~ **Plastic Skirt and Touch-up Paint Booth**, utilizing an air atomization or HVLP spray application system, coating a maximum of 1.375 RV skirts (plastic) per hour; **and**

~~(c) One (1) surface coating spray booth, identified as Cabinet Shop Paint Booth, utilizing a HVLP spray application system, coating a maximum of 1.375 RV wood cabinets per hour;~~

(~~d~~**c**) One (1) body putty application process, identified as Paint Prep Shop, applying putty to a maximum of 1.375 RVs per hour~~;~~**.**

Insignificant Activities

(~~e~~**d**) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour;

(~~f~~**e**) One (1) foam seal shop, extruding urethane foam sealant into the cavities of plastic RV bodies; and

(~~g~~**f**) One (1) woodworking operation, identified as Cabinet Shop, with a maximum process weight rate of 500 pounds of lumber per hour, equipped with one (1) cyclone for particulate matter control.

Plant 2 consists of the following emission units:

(~~h~~**g**) Five (5) metal inert gas (MIG) welding stations and one (1) stick welding station, both with a maximum process weight rate of 759 pounds per hour.

The insignificant activities have been removed from Section D.1 and have been added to Section D.2 under an "Insignificant Activities" heading. The following changes have been made to the facility description boxes in Section D.1 and Section D.2.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description
Plant 1 consists of the following emission units:

(a) ~~One (1) surface coating spray booth, identified as Assembly Line, utilizing an air atomization, a HVLP and an air airless spray application system, coating a maximum of 1.375 RVs per hour;~~ **One (1) recreational vehicle (RV) Assembly Line, manufacturing 1.375 Rvs per hour;**

(b) One (1) surface coating spray booth, identified as ~~New Paint Shop~~ **Plastic Skirt and Touch-up Paint Booth**, utilizing an air atomization or HVLP spray application system, coating a maximum of 1.375 RV skirts (plastic) per hour; **and**

~~(c) One (1) surface coating spray booth, identified as Cabinet Shop Paint Booth, utilizing a HVLP spray application system, coating a maximum of 1.375 RV wood cabinets per hour;~~

(~~d~~**c**) One (1) body putty application process, identified as Paint Prep Shop, applying putty to a maximum of 1.375 RVs per hour~~;~~**.**

~~(c**d**) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour; and~~

~~(f**e**) One (1) foam seal shop, extruding urethane foam sealant into the cavities of plastic RV bodies.~~

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description

Insignificant Activities

(d) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour;

(e) One (1) foam seal shop, extruding urethane foam sealant into the cavities of plastic RV bodies; and

(~~g~~**f**) One (1) woodworking operation, identified as Cabinet Shop, with a maximum process weight rate of 500 pounds of lumber per hour, equipped with one (1) cyclone for particulate matter control.

Plant 2 consists of the following emission units:

(~~h~~**g**) Five (5) metal inert gas (MIG) welding stations and one (1) stick welding station, both with a maximum process weight rate of 759 pounds per hour.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Comment 4

D.1.1 (a) Comment and Change Request

The BACT applies to the Assembly Line only, the surface coating spray booth is separate and should be removed from the first sentence. Reference to surface coating spray booth should be removed from the second sentence.

Response 4

The following changes have been made to Section D.1.1(a).

D.1.1 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

(a) Pursuant to 326 IAC 8-1-6 (New Facilities, General Reduction Requirements), the Best Available Control Technology (BACT) for the one (1) ~~surface coating spray booth, identified as~~ Assembly Line, shall be the following limitation and the work practice standards:

The VOC usage for the one (1) ~~surface coating spray booth, identified as~~ Assembly Line, shall be limited to 52 tons per twelve (12) consecutive month period.

Forest River will apply all sealants, adhesives, and cleaners with extrusion (“squeeze tubes”), brushing, and hand wiping techniques.

Minor amounts of paint will be applied using aerosol spray cans which is a form of airless spray technology.

Employees will close open containers when not in use.

(b) Any change or modification which would increase the potential to emit VOC from the one (1) surface coating spray booth, identified as New Paint Shop to twenty-five (25) tons per year or more, shall obtain prior approval from IDEM, OAQ and shall be subject to the requirements of 326 IAC 8-1-6.

Comment 5

D.1.1 (b) Comment and Change Request

The identification of "New Paint Booth" should be removed and the spray booth should be identified as Plastic Skirt and Touch-up Paint Booth.

Response 5

The following changes have been made to Section D.1.1(b).

D.1.1 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

(a) Pursuant to 326 IAC 8-1-6 (New Facilities, General Reduction Requirements), the Best Available Control Technology (BACT) for the one (1) ~~surface coating spray booth, identified as~~ Assembly Line, shall be the following limitation and the work practice standards:

The VOC usage for the one (1) ~~surface coating spray booth, identified as~~ Assembly Line, shall be limited to 52 tons per twelve (12) consecutive month period.

Forest River will apply all sealants, adhesives, and cleaners with extrusion ("squeeze tubes"), brushing, and hand wiping techniques.

Minor amounts of paint will be applied using aerosol spray cans which is a form of airless spray technology.

Employees will close open containers when not in use.

(b) Any change or modification which would increase the potential to emit VOC from the one (1) surface coating spray booth, identified as ~~New Paint Shop~~ **Plastic Skirt and Touch-up Paint Booth** to twenty-five (25) tons per year or more, shall obtain prior approval from IDEM, OAQ and shall be subject to the requirements of 326 IAC 8-1-6.

Comment 6

D.1.2 and D.1.3 Comment and Change Request

Since the Cabinet Shop Paint booth has been discontinued these two conditions should be deleted in there entirety.

Response 6

Condition D.1.2 and Condition D.1.3 have been deleted. The remaining conditions in Section D.1 have been re-numbered accordingly.

~~D.1.2 Volatile Organic Compounds (VOCs) [326 IAC 8-2-12]~~

~~Any change or modification which would increase the potential to emit VOC from the one (1) surface coating spray booth, identified as Cabinet Shop Paint Booth to fifteen (15) pounds per day or more, shall obtain prior approval from IDEM, OAQ and shall be subject to the requirements of 326 IAC 8-2-12.~~

~~D.1.3 Hazardous Air Pollutants (HAPs) [326 IAC 2-4.1-1]~~

~~Any change or modification which would increase the potential to emit single HAP or total HAPs from the one (1) surface coating spray booth, identified as Cabinet Shop Paint Booth to ten (10) tons per year or twenty-five (25) tons per year, respectively, shall obtain prior approval from IDEM, OAQ and shall be subject to the requirement of 326 IAC 2-4.1-1.~~

Comment 7

D.1.4 (a) Comment and Change Request

There is only one surface coating booth(plastic skirt and touch-up spray coating) and the reference to assembly line is for paint spraying from cans only. The Cabinet Shop paint booth has been discontinued. Please change this to reflect that there is only one booth where spraying is performed.

Response 7

The following changes have been made to Condition D.1.4(a) (now re-numbered D.1.2(a)).

D.1.~~4~~**2** Particulate Matter (PM) [326 IAC 6-3-2(c)]

(a) The particulate matter (PM) from the ~~three (3)~~ **one (1)** surface coating spray booth~~s~~, identified as ~~Assembly Line, New Paint Shop and Cabinet Shop Paint Booth,~~ **Plastic Skirt and Touch-up Paint Booth and the particulate mater (PM) from the Assembly Line (when spraying paint from cans only)** shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

Comment 8

D.1.5 Comment and Change Request

Since there is dry filter control associated with the plastic skirt and touch-up booth only in D.1, and there is operator training in place, there is no need for an additional preventive maintenance plan.

Response 8

The Compliance Monitoring Plan is made up of the PMP, the CRP, the compliance monitoring and compliance determination requirements in section D of the permit, and the record keeping and reporting requirements in sections C and D. IDEM decided to list all these requirements under this new name, the Compliance Monitoring Plan (CMP), to distinguish them from the PMP requirements. The section D provisions set out which facilities must comply with the CMP requirement. The training program is part of the CMP. No changes have been made to permit as a result of this comment.

Comment 9

D.1.7 Comment and Change Request
There is no need to have this condition because there are no VOC content restrictions and there are no usage limitations since assembly emissions are already based on maximum potential usages. Please remove this condition in its entirety.

Response 9

Condition D.1.7 (now re-numbered D.1.5) is necessary to show compliance with the BACT condition in D.1.1. The condition clearly states that:

"The VOC usage for the one (1) surface coating spray booth, identified as Assembly Line, shall be limited to 52 tons per twelve (12) consecutive month period."

No changes have been made to the permit as a result of this comment.

Comment 10

D.1.8 Comment and Change Request
There is no need to require this condition since all potential emissions are based on maximum process rates. In the event that changes are made to the assembly process which would increase emissions the source will submit a permit modification application to the OAQ. Please remove this condition in its entirety.

Response 10

Condition D.1.8 (now re-numbered D.1.6) is necessary to show compliance with the BACT condition in D.1.1. If changes are made to the assembly process or the types of coatings/adhesives used which would increase emissions the source shall submit a revised BACT analysis to IDEM, OAQ. No changes have been made to the permit as a result of this comment.

Comment 11

D.1.9 (a) and (b) Comment and Change Request
Since the potential emissions are based on maximum operating capacities as stated in the above paragraphs (D.1.7 and D.1.8) and since the underlying rule does not speak to quantities used, dates of usage, amount of cleanup solvent used, or monthly volumes or weights of VOC emitted, we request that these conditions be removed.

Response 11

Condition D.1.9 is necessary to show compliance with the BACT condition in D.1.1. The BACT for the Assembly Line was determined to be work practice standards with a VOC limitation of 52 tons per year. In order to show compliance with the work practice standards and the VOC limitation, Condition D.1.9 (now re-numbered D.1.7) is required. No changes have been made to the permit as a result of this comment, but Condition D.1.9 (now re-numbered D.1.7) has been revised to reflect that Conditions D.1.2 and D.1.3 have been deleted from the permit.

D.1.9 Record Keeping Requirements

(a) To document compliance with Condition~~s~~ D.1.1(a), ~~D.1.2 and D.1.3,~~ the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC and HAP usage limits and/or the VOC and HAP emission limits established in Condition~~s~~ D.1.1(a)~~, D.1.2 and D.1.3~~.

(1) The amount and VOC and HAP content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;

(2) A log of the dates of use;

(3) The cleanup solvent usage for each month;

(4) The total VOC and HAP usage for each month; and

(5) The weight of VOCs and HAPs emitted for each compliance period.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

Comment 12

D.2 (g) & (h) Comments and Change Request

As previously stated the woodworking and welding operations are insignificant facilities and should be included under a heading for Insignificant Facilities. Please make this change. In addition to welding, the insignificant wall and roof lamination may also take place in Plant 2.

Response 12

The following changes have been made to Section A.2 under Plant 2.

A.2 Emissions units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

Insignificant Activities

(~~c~~**d**) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour;

(~~f~~**e**) One (1) foam seal shop, extruding urethane foam sealant into the cavities of plastic RV bodies; and

(~~g~~**f**) One (1) woodworking operation, identified as Cabinet Shop, with a maximum process weight rate of 500 pounds of lumber per hour, equipped with one (1) cyclone for particulate matter control.

Plant 2 consists of the following emission units:

(~~h~~**g**) Five (5) metal inert gas (MIG) welding stations and one (1) stick welding station, both with a maximum process weight rate of 759 pounds per hour~~.~~**; and**

(h) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour.

The following changes have been made to the facility description box in Section D.2.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description

Insignificant Activities

(d) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour;

(e) One (1) foam seal shop, extruding urethane foam sealant into the cavities of plastic RV bodies; and

(~~g~~**f**) One (1) woodworking operation, identified as Cabinet Shop, with a maximum process weight rate of 500 pounds of lumber per hour, equipped with one (1) cyclone for particulate matter control.

Plant 2 consists of the following emission units:

(~~h~~**g**) Five (5) metal inert gas (MIG) welding stations and one (1) stick welding station, both with a maximum process weight rate of 759 pounds per hour~~.~~**; and**

(h) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Comment 13

D.2.5 Comment and Change Request
No baghouse is used for control, woodworking has a cyclone only for sawdust control. Please remove reference to bag failure.

Response 13

Condition D.2.5 has been replaced with a new Condition D.2.5 (Cyclone Inspections). Also, a new Condition D.2.6 (Cyclone Failure Detection) has been added to the permit.

~~D.2.5 Failure Detection~~

~~In the event that bag failure has been observed:~~

~~Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).~~

D.2.5 Cyclone Inspections

An inspection shall be performed each calender quarter of all cyclones controlling the woodworking operation when venting to the atmosphere. A cyclone inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting to the indoors.

D.2.6 Cyclone Failure Detection

In the event that cyclone failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions). Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

The following revisions have been made to the Technical Support Document under the appropriate sections (**bolded** language has been added, the language with a ~~line~~ through it has been deleted). The OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

Unpermitted Emission Units and Pollution Control Equipment

The source also consists of the following unpermitted facilities/units:

Plant 1 consists of the following emission units:

(a) ~~One (1) surface coating spray booth, identified as Assembly Line, utilizing an air atomization, a HVLP and an air airless spray application system, coating a maximum of 1.375 RVs per hour;~~ **One (1) recreational vehicle (RV) Assembly Line, manufacturing 1.375 RVs per hour.**

(b) One (1) surface coating spray booth, identified as ~~New Paint Shop~~ **Plastic Skirt and Touch-up Paint Booth**, utilizing an air atomization or HVLP spray application system, coating a maximum of 1.375 RV skirts (plastic) per hour;

~~(c) One (1) surface coating spray booth, identified as Cabinet Shop Paint Booth, utilizing a HVLP spray application system, coating a maximum of 1.375 RV wood cabinets per hour;~~

(~~d~~**c**) One (1) body putty application process, identified as Paint Prep Shop, applying putty to a maximum of 1.375 RVs per hour~~;~~**.**

Insignificant Activities

(~~e~~**d**) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour;

(~~f~~**e**) One (1) foam seal shop, extruding urethane foam sealant into the cavities of plastic RV bodies; and

(~~g~~**f**) One (1) woodworking operation, identified as Cabinet Shop, with a maximum process weight rate of 500 pounds of lumber per hour, equipped with one (1) cyclone for particulate matter control.

Plant 2 consists of the following emission units:

(~~h~~**g**) Five (5) metal inert gas (MIG) welding stations and one (1) stick welding station, both with a maximum process weight rate of 759 pounds per hour~~.~~**; and**

(h) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (Appendix A, pages 1 through ~~8~~**7**).

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	~~71.22~~ **71.20**
PM-10	~~71.22~~ **71.20**
SO_2	0.00
VOC	62.55
CO	0.00
NO_x	0.00

HAP's	Potential To Emit (tons/year)
Methyl ethyl ketone	0.96
Toluene	1.79
Xylene	1.17
Ethylbenzene	0.16
Hexane	0.20
Methyl isobutyl ketone	0.02
Manganese	0.06
Crominum	0.01
TOTAL	4.37

(a) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1-1 (New Source Toxics Control)

The ~~three (3)~~ **one (1)** surface coating spray booth~~s~~ (identified as ~~Assembly Line, New Paint Shop and Cabinet Shop Paint Booth~~ **Plastic Skirt and Touch-up Paint Booth**) **and the Assembly Line** are not subject to this rule because they have the potential to emit single HAP and total HAPs of less than 10 and 25 tons per twelve (12) consecutive month period, respectively. Therefore, they will not be subject to the requirements of 326 IAC 2-4.1-1 (New Source Toxics Control).

326 IAC 6-3-2 (Process Operations)

(a) The particulate matter (PM) from the ~~three (3)~~ **one (1)** surface coating spray booth~~s~~, identified as ~~Assembly Line, New Paint Shop and Cabinet Shop Paint Booth,~~ **Plastic Skirt and Touch-up Paint Booth and the particulate mater (PM) from the Assembly Line (when spraying paint from cans only)** shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)

Pursuant to 326 IAC 8-1-6, new facilities located anywhere in the state that were constructed on or after January 1, 1980, which have a potential to emit (PTE) VOC at 25 tons or more per year, and which are not otherwise regulated by another provision of Article 8, are subject to the rule requirements. The one (1) ~~surface coating spray booth, identified as~~ Assembly Line (this facility applies adhesives to structural wood and to plastic (not wood furniture or cabinets or to metal substrates) therefore no part of 326 IAC 8-2 applies to the assembly line) has the potential to emit VOC above 25 tons per year.

~~326 IAC 8-2-12 (Wood Furniture and Cabinet Coating)~~

~~Potential volatile organic compounds (VOC) from the one (1) surface coating spray booth, identified as Cabinet Shop Paint Booth, are below fifteen (15) pounds per day. Therefore, the requirements of 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating) will not apply.~~

326 IAC 8

There are no 326 IAC 8 rules applicable to the one (1) surface coating spray booth, identified as ~~New Paint Shop~~ **Plastic Skirt and Touch-up Paint Booth**, because it coats plastic and has potential VOC emissions of below twenty-five (25) tons per year.

Upon further review, the OAQ has decided to make the following revisions to the permit:

1. Condition B.6 (Permit Term) has been added to the permit.

B.6 Permit Term [326 IAC 2-6.1-7]

This permit is issued for a fixed term of five (5) years form the original date, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date.

Appendix A: Emission Calculations

Company Name: Forest River, Inc. - Cardinal Division
Address City IN Zip: 58277 State Road 19 & 27824 County Road 20, Elkhart, IN 46517
MSOP: 039-10341
Plt ID: 039-00295
Reviewer: NH/EVP

Uncontrolled Potential Emissions (tons/year)

	Emissions Generating Activity					
Pollutant	Assembly Line	Paint Prep Shop	Plastic Skirt and Touch-up Paint Booth	Welding Shop	Cabinet Shop (Woodworking)	**TOTAL**
PM	0.50	6.02	0.52	1.09	63.07	71.20
PM10	0.50	6.02	0.52	1.09	63.07	71.20
SO2	0.00	0.00	0.00	0.00	0.00	0.00
NOx	0.00	0.00	0.00	0.00	0.00	0.00
VOC	51.24	0.00	11.31	0.00	0.00	62.55
CO	0.00	0.00	0.00	0.00	0.00	0.00
total HAPs	1.82	0.00	2.47	0.08	0.00	4.37
worst case single HAP	0.76	0.00	1.03	0.06	0.00	1.03

Total emissions based on rated capacity at 8,760 hours/year.

Controlled Potential Emissions (tons/year)

	Emissions Generating Activity					
Pollutant	Assembly Line	Paint Prep Shop	Plastic Skirt and Touch-up Paint Booth	Welding Shop	Cabinet Shop (Woodworking)	**TOTAL**
PM	0.50	6.02	0.52	1.09	6.31	14.44
PM10	0.50	6.02	0.52	1.09	6.31	14.44
SO2	0.00	0.00	0.00	0.00	0.00	0.00
NOx	0.00	0.00	0.00	0.00	0.00	0.00
VOC	51.24	0.00	11.31	0.00	0.00	62.55
CO	0.00	0.00	0.00	0.00	0.00	0.00
total HAPs	1.82	0.00	2.47	0.08	0.00	4.37
worst case single HAP	0.76	0.00	1.03	0.06	0.00	1.03

Total emissions based on rated capacity at 8,760 hours/year, after control.

Appendix A: Emissions Calculations
VOC and Particulate
From Assembly Line

Company Name: Forest River, Incorporated
Address City IN Zip: 58277 State Road 19 South & 27824 County Road 20, Elkhart, IN 46517
MSOP: 039-10341
PIt ID: 039-00295
Reviewer: NH/EVP

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Assembly Line																
GeoCell 2300	7.923	35.00%	0.0%	35.0%	0.0%	65.00%	1.80000	1.375	2.77	2.77	6.86	164.72	30.06	0.00	4.27	100%
ABS Cement	7.09	100.00%	0.0%	100.0%	0.0%	0.00%	0.00985	1.375	7.09	7.09	0.10	2.30	0.42	0.00	ERR	100%
ABS Cleaner	6.61	100.00%	5.0%	95.0%	n/a	0.00%	0.00394	1.375	6.28	6.28	0.03	0.82	0.15	0.00	ERR	100%
Sealant	8.924	5.00%	0.0%	5.0%	0.0%	95.00%	0.00269	1.375	0.45	0.45	0.00	0.04	0.01	0.00	0.47	100%
Black Paint	7.9	85.00%	0.0%	85.0%	0.0%	15.00%	0.12500	1.375	6.72	6.72	1.15	27.70	5.06	0.00	44.77	100%
8011 Adhesive	8.35	0.60%	0.0%	0.6%	0.0%	99.00%	2.96000	1.375	0.05	0.05	0.20	4.89	0.89	0.00	0.05	100%
Sealer	11.31	94.00%	0.0%	94.0%	0.0%	5.00%	0.00358	1.375	10.63	10.63	0.05	1.26	0.23	0.00	212.63	100%
Silicone	7	0.00%	0.0%	0.0%	0.0%	100.00%	0.01000	1.375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%
Mineral Spirits	6.514	100.00%	0.0%	100.0%	0.0%	0.00%	0.28700	1.375	6.51	6.51	2.57	61.69	11.26	0.00	ERR	100%
PreCleaner	6.37	100.00%	0.0%	100.0%	0.0%	0.00%	0.03580	1.375	6.37	6.37	0.31	7.53	1.37	0.00	ERR	100%
Spot Clear	7.94	58.50%	0.0%	58.5%	0.0%	40.00%	0.05020	1.375	4.64	4.64	0.32	7.69	1.40	0.50	11.61	50%
Contact Adhesive	8.2	47.40%	0.0%	47.4%	0.0%	55.00%	0.00808	1.375	3.89	3.89	0.04	1.04	0.19	0.00	7.07	100%
Spray' Go Paint	6.088	86.10%	0.0%	86.1%	0.0%	16.00%	0.00200	1.375	5.24	5.24	0.01	0.35	0.06	0.00	32.76	75%
Sta-Put Adhesive	6.505	80.00%	0.0%	80.0%	0.0%	22.00%	0.00444	1.375	5.20	5.20	0.03	0.76	0.14	0.00	23.65	100%
State Potential Emissions			**Add worst case coating to all solvents**								**11.70**	**280.79**	**51.24**	**0.50**		

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emissions Calculations
VOC and Particulate
From Plastic Skirt and Touch-up Paint Booth

Company Name: Forest River, Inc. - Cardinal Division
Address City IN Zip: 58277 State Road 19 & 27824 County Road 20, Elkhart, IN 46517
MSOP: 039-10341
Plt ID: 039-00295
Reviewer: NH/EVP

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Reducer	7.21	100.00%	0.0%	100.0%	0.0%	0.00%	0.05280	1.375	7.21	7.21	0.52	12.56	2.29	0.00	ERR	50%
Hardener	7.84	0.00%	0.0%	0.0%	0.0%	100.00%	0.00350	1.375	0.00	0.00	0.00	0.00	0.00	0.08	0.00	50%
Stabilizer	7.25	97.50%	0.0%	97.5%	0.0%	1.50%	0.07170	1.375	7.07	7.07	0.70	16.73	3.05	0.04	471.25	50%
7000 Base	9.2	88.30%	0.0%	88.3%	0.0%	20.00%	0.12200	1.375	8.12	8.12	1.36	32.71	5.97	0.40	40.62	50%

State Potential Emissions **Add worst case coating to all solvents** **2.58** **61.99** **11.31** **0.52**

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emission Calculations
HAP Emission Calculations

Company Name: Forest River, Inc. - Cardinal Division
Address City IN Zip: 58277 State Road 19 & 27824 County Road 20, Elkhart, IN 46517
MSOP: 039-10341
Plt ID: 039-00295
Permit Reviewer: NH/EVP

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % MEK	Weight % Toluene	Weight % Xylene	Weight % Ethylbenzene	Weight % Hexane	Weight % Ethylene Glycol	Weight % Hexamethylene-1, 6-diisocyanate	Weight % MIBK	MEK Emissions (ton/yr)	Toluene Emissions (ton/yr)	Xylene Emissions (ton/yr)	Ethylbenzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Ethylene Glycol Emissions (ton/yr)	Hexamethylene-1, 6-diisocyanate Emissions (ton/yr)	MIBK Emissions (ton/yr)
Assembly Line																			
ABS Cement	7.09	0.00985	1.375	75.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ABS Cleaner	6.61	0.00394	1.375	95.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black Paint	7.9	0.12500	1.375	0.00%	8.16%	5.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.49	0.31	0.00	0.00	0.00	0.00	0.00
Sealer	11.31	0.00358	1.375	6.06%	30.70%	13.62%	0.00%	0.00%	0.00%	0.00%	6.70%	0.01	0.07	0.03	0.00	0.00	0.00	0.00	0.02
PreCleaner	6.37	0.03580	1.375	0.00%	14.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00
Contact Adhesive	8.2	0.00808	1.375	0.00%	0.00%	0.00%	0.00%	35.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00
Spray' Go Paint	6.088	0.00200	1.375	10.00%	5.00%	10.00%	3.00%	0.00%	0.00%	0.00%	0.00%	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Sta-Put Adhesive	6.505	0.00444	1.375	0.00%	0.00%	0.00%	0.00%	35.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00
Plastic Skirt and Touch-up Paint Booth																			
Reducer	7.21	0.05280	1.375	0.00%	8.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00
Hardener	7.84	0.00350	1.375	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stabilizer	7.25	0.07170	1.375	0.00%	27.00%	26.00%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.85	0.81	0.16	0.00	0.00	0.00	0.00
7000 Base	9.2	0.12200	1.375	7.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total State Potential Emissions												**0.96**	**1.79**	**1.17**	**0.16**	**0.20**	**0.00**	**0.00**	**0.02**
METHODOLOGY																		**Total HAPs =**	**4.30**

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Appendix A: Emissions Calculations
VOC and Particulate
From Paint Prep Shop (Old Paint Shop)

Company Name: Forest River, Incorporated
Address City IN Zip: 58277 State Road 19 South & 27824 County Road 20, Elkhart, IN 46517
MSOP: 039-10341
Plt ID: 039-00295
Reviewer: NH/EVP

Paint Prep Shop (Old Paint Shop) Emissions

	1	lb putty/RV x	1.375	RV/hr =	**1.375**	**lb/hr**			
PM/PM10		1.375	lb/hr x	8760	hr/yr /	2000	lb/ton =	**6.02**	**tons/yr**

Allowable PM/PM10 emissions

4.1	x (		15.8	tons/hr) ^	0.67	
		=	**26.05**	**lbs PM/hr**		
		=	**114.12**	**tons PM/yr**		

Potential emissions are less than the allowable emissions, thus the source will comply with 326 IAC 6-3-2

Appendix A: Emissions Calculations
Process Particulate Emissions from Cabinet Shop (Woodworking)

Company Name: Forest River, Inc. - Cardinal Division
Address City IN Zip: 58277 State Road 19 & 27824 County Road 20, Elkhart, IN 46517
MSOP: 039-10341
Plt ID: 039-00295
Reviewer: NH/EVP

PM/PM10:	0.04 gr/acf outlet	4200 acf/min x	60 min/hr /	7000 gr/lb x	4.38 ton/yr / lb/hr	**63.07 tons/yr (uncontrolled)**
	where the baghouse control efficiency is listed a	90.00%				**6.31 tons/yr (controlled)**

Company Name: Forest River, Inc. - Cardinal Division
Address City IN Zip: 58277 State Road 19 & 27824 County Road 20, Elkhart, IN 46517
Permit No./Plt ID: 039-10341-00295
Reviewer: NH/EVP

PROCESS	Number of Stations	Max. electrode consumption per station		EMISSION FACTORS * (lb pollutant / lb electrode)				EMISSIONS (lb/hr)				TOTAL HAPS (lb/hr)
WELDING		(lbs/hr)		PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Metal Inert Gas (MIG)(ER70S)	5	5.75575		0.0052	0.00032	0.0001	0.0001	0.150	0.009	0.003	0.003	0.015
Stick (E7018 electrode)	1	4.66125		0.0211	0.0009	--	--	0.098	0.004	0.000	0.000	0.004
EMISSION TOTALS								PM = PM10	Mn	Ni	Cr	Total HAPs
Potential Emissions lbs/hr								0.25	0.01	0.00	0.00	0.02
Potential Emissions lbs/day								5.95	0.32	0.00	0.07	0.46
Potential Emissions tons/year								**1.09**	0.06	0.00	0.01	0.08

METHODOLGY

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column. Consult AP-42 or other reference for different electrode types.
Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)
Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)
Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day
Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/day x 1 ton/2,000 lbs.
Plasma cutting emission factors are from the American Welding Society study published in Sweden (March 1994).
Welding and other flame cutting emission factors are from an internal training session document.
See AP-42, Chapter 12.19 for additional emission factors for welding.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Minor Source Operating Permit

Source Background and Description

Source Name:	Forest River, Incorporated
Source Location:	Plant 1 - 58277 State Road 19 South, Elkhart, IN 46517 Plant 2 - 27824 County Road 20, Elkhart, IN 46517
County:	Elkhart
SIC Code:	3716, 3792
Operation Permit No.:	MSOP 039-10341-00295
Permit Reviewer:	NH/EVP

The Office of Air Quality (OAQ) has reviewed an application from Forest River, Incorporated relating to the operation of a towable and motorized recreational vehicle manufacturing facility.

History

The RV assembly plant located at 58277 State Road 19 South, Elkhart, IN 46517 was originally constructed and operated by Champion Motor Homes. Champion Motor Homes was never permitted by IDEM, OAQ and was later purchased by Firan Motor Coach Company in approximately 1992. Firan applied for a construction permit CP039-4231-00295 that was issued on March 30, 1995. The construction permit permitted the existing equipment and one (1) new paint booth.

On December 19, 1996, Forest River, Incorporated purchased the plant located at 58277 State Road 19 South, Elkhart, IN 46517 from Firan Motor Coach Company. Forest River, Incorporated failed to transfer the construction and operation permit CP105-4231-00295, issued on March 30, 1995 to Firan Motor Coach Company. From January 1997 to September 12, 1997 (when Forest River, Incorporated submitted a Title V application) Forest River, Incorporated has operated without receipt of a proper permit.

On December 19, 1996, Forest River, Incorporated also purchased the plant located at 27824 County Road 20, Elkhart, IN 46517 from Firan Motor Coach Company. Forest River, Incorporated constructed and operated the fiberglass operation without receipt of a proper permit from IDEM, OAQ from January 1997 to September 12, 1997 (when Forest River, Incorporated submitted a Title V application). On August 24, 1998, the Fiberglass operation located at 27824 CR 20, Elkhart, IN 46517 was discontinued and dismantled from the source. The fiberglass parts are now being outsourced and the building has been remodeled to provide mechanical service for the RV's. This mechanical service operation will produce negligible air emissions.

Unpermitted Emission Units and Pollution Control Equipment

The source also consists of the following unpermitted facilities/units:

Plant 1 consists of the following emission units:

(a) One (1) surface coating spray booth, identified as Assembly Line, utilizing an air atomization, a HVLP and an air airless spray application system, coating a maximum of 1.375 RVs per hour;

(b) One (1) surface coating spray booth, identified as New Paint Shop, utilizing an air atomization or HVLP spray application system, coating a maximum of 1.375 RV skirts (plastic) per hour;

(c) One (1) surface coating spray booth, identified as Cabinet Shop Paint Booth, utilizing a HVLP spray application system, coating a maximum of 1.375 RV wood cabinets per hour;

(d) One (1) body putty application process, identified as Paint Prep Shop, applying putty to a maximum of 1.375 RVs per hour;

(e) One (1) side wall and roof assembly lamination process, identified as Lamination, using urethane adhesive to assemble 1.375 RV roofs per hour and 2.75 RV side walls per hour;

(f) One (1) foam seal shop, extruding urethane foam sealant into the cavities of plastic RV bodies; and

(g) One (1) woodworking operation, identified as Cabinet Shop, with a maximum process weight rate of 500 pounds of lumber per hour, equipped with one (1) cyclone for particulate matter control.

Plant 2 consists of the following emission units:

(h) Five (5) metal inert gas (MIG) welding stations and one (1) stick welding station, both with a maximum process weight rate of 759 pounds per hour.

Existing Approvals

Since Forest River, Incorporated failed to transfer the construction and operation permit CP105-4231-00295, issued on March 30, 1995 to Firan Motor Coach Company, it does not have any existing approvals.

Source Definition

This towable and motorized recreational vehicle manufacturing company consists of two (2) plants:

(a) Plant 1 is located at 58277 State Road 19 South, Elkhart, IN 46517; and

(b) Plant 2 is located at 27824 County Road 20 (also known as Mishiwaka Road), Elkhart, IN 46517.

Since the two (2) plants are about one (1) mile apart from each other, are operating under common ownership, have the same SIC Codes (3716 and 3792), and the Mishiwaka Road plant provides more than 50% of the welded items to the other plant, they will be considered one source.

Enforcement Issue

(a) IDEM is aware that equipment has been operated from January 1997 to September 12, 1997 (the source submitted a Title V application on September 12, 1997) prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled *Unpermitted Emission Units and Pollution Control Equipment*.

(b) The Fiberglass operation located at 27824 CR 20, Elkhart, IN 46517 was removed from the source on August 24, 1998. Forest River, Incorporated constructed and operated the fiberglass operation from January 1997 to September 12, 1997 (the source submitted a Title V application on September 12, 1997) prior to receipt of the proper permit.

(c) IDEM is reviewing these matters and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on September 12, 1997, with additional information received on August 25, 1998.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (Appendix A, pages 1 through 8).

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	71.22
PM-10	71.22
SO_2	0.00
VOC	62.55
CO	0.00
NO_x	0.00

HAP's	Potential To Emit (tons/year)
Methyl ethyl ketone	0.96
Toluene	1.79
Xylene	1.17
Ethylbenzene	0.16
Hexane	0.20
Methyl isobutyl ketone	0.02
Manganese	0.06
Crominum	0.01
TOTAL	4.37

(a) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Actual Emissions

No previous emission data has been received from the source.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM-10	attainment
SO_2	attainment
NO_2	attainment
Ozone	maintenance
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as maintenance attainment for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Elkhart County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(c) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2, 40 CFR 52.21, or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, including the emissions from this permit MSOP 039-10341-00295, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,
(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
(c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source. This status has been verified by the OAQ inspector assigned to the source.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR art 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it is located in Elkhart County and has the potential to emit more than ten (10) tons per year for of VOC. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1-1 (New Source Toxics Control)

The three (3) surface coating spray booths (identified as Assembly Line, New Paint Shop and Cabinet Shop Paint Booth) are not subject to this rule because they have the potential to emit single HAP and total HAPs of less than 10 and 25 tons per twelve (12) consecutive month period, respectively. Therefore, they will not be subject to the requirements of 326 IAC 2-4.1-1 (New Source Toxics Control).

326 IAC 6-3-2 (Process Operations)

(a) The particulate matter (PM) from the three (3) surface coating spray booths, identified as Assembly Line, New Paint Shop and Cabinet Shop Paint Booth, shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

(b) The particulate matter (PM) from the one (1) body putty application process, identified as Paint Prep Shop, shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

$E = 4.10\ (15.8)^{0.67} = 26.05$ lbs PM/hr

Based on the above equation, particulate matter emissions from the one (1) body putty application process, identified as Paint Prep Shop, shall be limited to 26.05 pounds per hour.

Compliance calculation:
Uncontrolled PM emissions =
(6.02 tons PM/yr) * (yr/8,760 hrs) * (2,000 lbs/ton) = 1.37 lbs PM/hr

Maximum uncontrolled lbs PM/hr (1.37) is less than the allowable lbs PM/hr (26.05), therefore the one (1) body putty application process, identified as Paint Prep Shop, will comply with the requirements of 326 IAC 6-3-2.

(c) The particulate matter (PM) from the woodworking operation, identified as Cabinet Shop shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

$E = 4.10\ (0.25)^{0.67} = 1.62$ lbs PM/hr

Based on the above equation, particulate matter emissions from the woodworking operation shall be limited to 1.62 pounds per hour for a maximum process rate of 500 pounds per hour.

Uncontrolled Compliance calculation:
(63.07 tons PM/yr) * (yr/8,760 hrs) * (2,000 lbs/ton) = 14.40 lbs PM/hr

Controlled Compliance calculation:
(6.31 tons PM/yr) * (yr/8,760 hrs) * (2,000 lbs/ton) = 1.44 lbs PM/hr

The cyclone shall be in operation at all times when the woodworking operation, identified as Cabinet Shop is in operation, in order to comply with this limit.

(d) The particulate matter (PM) from the welding operation shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

$E = 4.10\ (0.3795)^{0.67} = 2.14$ lbs PM/hr

Based on the above equation, particulate matter emissions from the welding operation shall be limited to 2.14 pounds per hour for a maximum process rate of 759 pounds per hour.

Compliance calculation:
Uncontrolled PM emissions =
(1.09 tons PM/yr) * (yr/8,760 hrs) * (2,000 lbs/ton) = 0.25 lbs PM/hr

Maximum uncontrolled lbs PM/hr (0.25) is less than the allowable lbs PM/hr (2.14), therefore the welding operation will comply with the requirements of 326 IAC 6-3-2.

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)

Pursuant to 326 IAC 8-1-6, new facilities located anywhere in the state that were constructed on or after January 1, 1980, which have a potential to emit (PTE) VOC at 25 tons or more per year, and which are not otherwise regulated by another provision of Article 8, are subject to the rule requirements. The one (1) surface coating spray booth, identified as Assembly Line (this facility applies adhesives to structural wood and to plastic (not wood furniture or cabinets or to metal substrates) therefore no part of 326 IAC 8-2 applies to the assembly line) has the potential to emit VOC above 25 tons per year.

The options considered in the BACT analysis were:

(1) Regenerative Thermal Oxidation
(2) Thermal Oxidation
(3) Process Changes
(4) Catalytic Oxidation
(5) Adsorption
(6) Condensation
(7) No Control

Option (3) has been determined to be technically infeasible for the following reasons:

(3) Process Changes
Process changes are not feasible in the assembly area. The adhesives and sealants used in the assembly of Cardinal RVs have no known substitutes. Wider use of urethane adhesives is not feasible at this time as the geometry of the inside of the RVs precludes this high clamping forces and prolonged clamping periods required by urethane adhesives. Urethane adhesive also cannot be used where there is a possibility of exposure of the adhesive to sunlight. Ultraviolet radiation destroys polymerized urethane in a matter of days. The Spray'n Go aerosol spray paint has the same VOC content of all other aerosol paints currently available. When Freon 12 (listed as non-photochemically reactive) was eliminated by Title VIII of the Clean Air Act, the only feasible substitute has hexane, which is now used industry-wide in aerosol cans. The other materials used in assembly are inherently as low a VOC content as possible and are the result of considerable pollution prevention efforts. If and when lower VOC adhesives and aerosols become feasible, they will be used.

Option (4) has been determined to be technically infeasible for the following reasons:

(4) Catalytic Oxidation
Catalytic Oxidation is not technically feasible for this area. The adhesives and sealants used contain resins and isocyanates that will "poison" or blind the catalyst. Without proper catalyst performance, the operating temperature is not adequate for efficient destruction of VOC.

Option (5) has been determined to be technically infeasible for the following reasons:

(5) Adsorption
Adsorption is not technically feasible for this area. The adhesives used contain isocyanates that will polymerize on the surface of either carbon or zeolite adsorber surfaces, effectively destroying that surface's ability to adsorb or desorb the rest of the VOC.

Option (6) has been determined to be technically infeasible for the following reasons:

(6) Condensation
Condensation is not technically feasible in the assembly area. The VOCs emitted from the adhesives and sealants have condensation temperatures much lower than the temperatures that can be attained by commercially available condensation equipment. Most of the solvents emitted have "dew points" in the range of -40E to -60EF. Most commercially available condensers achieve an outlet temperature around 10EF. Therefore, the solvents would not be condensed.

The technically feasible options are regenerative thermal oxidation, thermal oxidation and no control. A cost analysis was performed to determine the economic feasibility of regenerative thermal oxidation, thermal oxidation and no control.

Economic Feasibility

Assembly Area Ventilation Requirements
In order to control an emission, it is first necessary to capture that emission. The assembly area is a large open area where bulky materials are moved to the vehicles as they are assembled. That large size of the vehicles and the pieces of material moving to them precludes building effective hoods. While it is possible to close most of the doors to the assembly area, the continuous traffic of vehicle chassis, weldments, and assembled vehicles and components requires that the six large (16' x 20') doors at the ends of the assembly area be kept continuously open. From the EPA criteria for "total enclosure" it is necessary to maintain a 200 ft/min face velocity across these doors. As flow rate equals area times average velocity, the minimum air flow rate necessary to maintain this face velocity is:

Flow Rate = (6 doors)(16 ft)(20 ft)(200 ft/min) = 384,000 acfm

An additional 10% should be allowed to maintain the face velocity while the various other access doors are intermittently opened. Therefore:

Flow Rate = (384,000 acfm)(1.1) = 422,400 acfm

Facility Summary

The amount of air flow required to be processed by emission controls is 422,400 acfm. The potential VOC emission for this facility is 51.2 tons per year. Either regenerative thermal oxidation or thermal oxidation can be reasonably expected to destroy 90% of the captured VOC, so the amount of VOC controlled would be 46.0 tons per year.

Costs of Emission Controls

Annualized Costs were developed using data and methods prescribed by the "OAQPS Control Cost Manual", EPA 453/B-96-001 Fifth Edition. All costs were corrected to 1996 dollars.

Annualized Costs	
Regenerative Thermal Oxidation	$1,816,072 per year
Thermal Oxidation	$1,005,294 per year
No Control	0 per year
Annualized Cost per ton of Pollutant Controlled	
Regenerative Thermal Oxidation	$39,479 per ton
Thermal Oxidation	$21,854 per ton
No Control	0 per ton

Regenerative thermal oxidation and thermal oxidation are not economically feasible. "No Control" is economically feasible.

Collateral Environmental Impacts

In either incineration strategy, enormous amounts of supplemental fuel will have to be burned to destroy the small amount of VOC captured in the large air flow involved. Again using equations from the OAQPS Control Cost Manual, we see the gas consumption required for each incineration option is:

Regenerative Thermal Oxidation	524.96 MMBtu/hr
Thermal Oxidation	314.94 MMBtu/hr

These are heat input rate equivalent to small electric utility boilers. As heat input rate exceeds 100 MMBtu/hr the emission factor from AP-42 would be:

NOx: 550 lb/MMCF

Annual Emissions

Regenerative Thermal Oxidation

$$NOx = \frac{(524.96\ MMBtu)(1\ MMCF)(550\ lb)(8{,}760\ hr)(1\ ton)}{(hr)\ (1{,}000\ MMBtu)(MMCF)\ (yr)\ (2{,}000\ lb)}$$

$$= 1{,}264.6\ tons/yr$$

Thermal Oxidation

$$NOx = \frac{(314.94\ MMBtu)(1\ MMCF)(550\ lb)(8{,}760\ hr)(1\ ton)}{(hr)\ (1{,}000\ MMBtu)(MMCF)\ (yr)\ (2{,}000\ lb)}$$

$$= 758.7\ tons/yr$$

Both of these would constitute PSD major modifications.

NOx Generation to VOC Destruction Ratios

Regenerative Thermal Oxidation: 27.5 tons NOx per ton VOC destroyed

Thermal Oxidation: 16.5 tons NOx per ton VOC destroyed

As NOx and VOC are both precursors to the formation of tropospheric ozone, one can safely conclude that the two incineration options are environmentally counterproductive.

Therefore, BACT has been determined to be the "No Control" option with a VOC limitation of 52 tons per year and the following work practice standards:

a) Forest River will apply all sealants, adhesives, and cleaners with extrusion ("squeeze tubes"), brushing, and hand wiping techniques.

b) Minor amounts of paint will be applied using aerosol spray cans which is a form of airless spray technology.

c) Employees will close open containers when not in use.

326 IAC 8-2-12 (Wood Furniture and Cabinet Coating)

Potential volatile organic compounds (VOC) from the one (1) surface coating spray booth, identified as Cabinet Shop Paint Booth, are below fifteen (15) pounds per day. Therefore, the requirements of 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating) will not apply.

326 IAC 8

There are no 326 IAC 8 rules applicable to the one (1) surface coating spray booth, identified as New Paint Shop, because it coats plastic and has potential VOC emissions of below twenty-five (25) tons per year.

Conclusion

The operation of this towable and motorized recreational vehicle manufacturing facility shall be subject to the conditions of the attached proposed **Minor Source Operating Permit 039-10341-00295.**

Appendix A: Emission Calculations

Company Name: Forest River, Inc. - Cardinal Division
Address City IN Zip: 58277 State Road 19 & 27824 County Road 20, Elkhart, IN 46517
CP: 039-10341
Plt ID: 039-00295
Reviewer: NH/EVP

Uncontrolled Potential Emissions (tons/year)

	Emissions Generating Activity								
Pollutant	Assembly Line	Paint Prep Shop	New Paint Shop	Foam Seal Shop	Side Wall and Roof Assembly Lamination Process	Cabinet Shop Paint Booth	Welding Shop	Cabinet Shop (Woodworking)	**TOTAL**
PM	0.50	6.02	0.52	0.00	0.00	0.02	1.09	63.07	71.22
PM10	0.50	6.02	0.52	0.00	0.00	0.02	1.09	63.07	71.22
SO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NOx	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VOC	51.24	0.00	11.31	0.00	0.00	0.00	0.00	0.00	62.55
CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
total HAPs	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.08
worst case single HAP	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.06

Total emissions based on rated capacity at 8,760 hours/year.

Controlled Potential Emissions (tons/year)

	Emissions Generating Activity								
Pollutant	Assembly Line	Paint Prep Shop	New Paint Shop	Foam Seal Shop	Side Wall and Roof Assembly Lamination Process	Cabinet Shop Paint Booth	Welding Shop	Cabinet Shop (Woodworking)	**TOTAL**
PM	0.50	6.02	0.52	0.00	0.00	0.02	1.09	6.31	14.46
PM10	0.50	6.02	0.52	0.00	0.00	0.02	1.09	6.31	14.46
SO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NOx	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VOC	51.24	0.00	11.31	0.00	0.00	0.00	0.00	0.00	62.55
CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
total HAPs	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.08
worst case single HAP	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.06

Total emissions based on rated capacity at 8,760 hours/year, after control.

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations

Company Name: Forest River, Incorporated
Address City IN Zip: 58277 State Road 19 South & 27824 County Road 20, Elkhart, IN 46517
CP: 039-10341
Plt ID: 039-00295
Reviewer: NH/EVP

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Assembly Area																
GeoCell 2300	7.923	35.00%	0.0%	35.0%	0.0%	65.00%	1.80000	1.375	2.77	2.77	6.86	164.72	30.06	0.00	4.27	100%
ABS Cement	7.09	100.00%	0.0%	100.0%	0.0%	0.00%	0.00985	1.375	7.09	7.09	0.10	2.30	0.42	0.00	ERR	100%
ABS Cleaner	6.61	100.00%	5.0%	95.0%	n/a	0.00%	0.00394	1.375	6.28	6.28	0.03	0.82	0.15	0.00	ERR	100%
Sealant	8.924	5.00%	0.0%	5.0%	0.0%	95.00%	0.00269	1.375	0.45	0.45	0.00	0.04	0.01	0.00	0.47	100%
Black Paint	7.9	85.00%	0.0%	85.0%	0.0%	15.00%	0.12500	1.375	6.72	6.72	1.15	27.70	5.06	0.00	44.77	100%
8011 Adhesive	8.35	0.60%	0.0%	0.6%	0.0%	99.00%	2.96000	1.375	0.05	0.05	0.20	4.89	0.89	0.00	0.05	100%
Sealer	11.31	94.00%	0.0%	94.0%	0.0%	5.00%	0.00358	1.375	10.63	10.63	0.05	1.26	0.23	0.00	212.63	100%
Silicone	7	0.00%	0.0%	0.0%	0.0%	100.00%	0.01000	1.375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%
Mineral Spirits	6.514	100.00%	0.0%	100.0%	0.0%	0.00%	0.28700	1.375	6.51	6.51	2.57	61.69	11.26	0.00	ERR	100%
PreCleaner	6.37	100.00%	0.0%	100.0%	0.0%	0.00%	0.03580	1.375	6.37	6.37	0.31	7.53	1.37	0.00	ERR	100%
Spot Clear	7.94	58.50%	0.0%	58.5%	0.0%	40.00%	0.05020	1.375	4.64	4.64	0.32	7.69	1.40	0.50	11.61	50%
Contact Adhesive	8.2	47.40%	0.0%	47.4%	0.0%	55.00%	0.00808	1.375	3.89	3.89	0.04	1.04	0.19	0.00	7.07	100%
Spray' Go Paint	6.088	86.10%	0.0%	86.1%	0.0%	16.00%	0.00200	1.375	5.24	5.24	0.01	0.35	0.06	0.00	32.76	75%
Sta-Put Adhesive	6.505	80.00%	0.0%	80.0%	0.0%	22.00%	0.00444	1.375	5.20	5.20	0.03	0.76	0.14	0.00	23.65	100%
State Potential Emissions			**Add worst case coating to all solvents**								**11.70**	**280.79**	**51.24**	**0.50**		

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emissions Calculations
VOC and Particulate
From New Paint Shop

Company Name: Forest River, Inc. - Cardinal Division
Address City IN Zip: 58277 State Road 19 & 27824 County Road 20, Elkhart, IN 46517
CP: 039-10341
Plt ID: 039-00295
Reviewer: NH/EVP

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Reducer	7.21	100.00%	0.0%	100.0%	0.0%	0.00%	0.05280	1.375	7.21	7.21	0.52	12.56	2.29	0.00	ERR	50%
Hardener	7.84	0.00%	0.0%	0.0%	0.0%	100.00%	0.00350	1.375	0.00	0.00	0.00	0.00	0.00	0.08	0.00	50%
Stabilizer	7.25	97.50%	0.0%	97.5%	0.0%	1.50%	0.07170	1.375	7.07	7.07	0.70	16.73	3.05	0.04	471.25	50%
7000 Base	9.2	88.30%	0.0%	88.3%	0.0%	20.00%	0.12200	1.375	8.12	8.12	1.36	32.71	5.97	0.40	40.62	50%

State Potential Emissions **Add worst case coating to all solvents** **2.58** **61.99** **11.31** **0.52**

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emissions Calculations
VOC, HAP and Particulate
From Cabinet Shop Paint Booth

Company Name: Forest River, Inc. - Cardinal Division
Address City IN Zip: 58277 State Road 19 & 27824 County Road 20, Elkhart, IN 46517
CP: 039-10341
Plt ID: 039-00295
Reviewer: NH/EVP

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Bull's Eye	11.0	60.00%	58.0%	2.0%	58.0%	40.00%	0.00358	1.375	0.52	0.22	0.00	0.03	0.00	0.02	0.55	75%

State Potential Emissions **Add worst case coating to all solvents** **0.00** **0.03** **0.00** **0.02**

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

HAP Emission Calculations

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Ethylene Glycol	Ethylene Glycol Emissions (ton/yr)
Bull's Eye	11	0.003580	1.375	2.00%	0.00

State Potential Emissions **0.00**

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Appendix A: Emission Calculations
HAP Emission Calculations

Company Name: Forest River, Inc. - Cardinal Division
Address City IN Zip: 58277 State Road 19 & 27824 County Road 20, Elkhart, IN 46517
CP#: 039-10341
Plt ID: 039-00295
Permit Reviewer: NH/EVP

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % MEK	Weight % Toluene	Weight % Xylene	Weight % Ethylbenzene	Weight % Hexane	Weight % Ethylene Glycol	Weight % Hexamethylene-1, 6-diisocyanate	Weight % MIBK	MEK Emissions (ton/yr)	Toluene Emissions (ton/yr)	Xylene Emissions (ton/yr)	Ethylbenzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Ethylene Glycol Emissions (ton/yr)	Hexamethylene-1, 6-diisocyanate Emissions (ton/yr)	MIBK Emissions (ton/yr)
Assembly Area																			
ABS Cement	7.09	0.00985	1.375	75.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ABS Cleaner	6.61	0.00394	1.375	95.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black Paint	7.9	0.12500	1.375	0.00%	8.16%	5.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.49	0.31	0.00	0.00	0.00	0.00	0.00
Sealer	11.31	0.00358	1.375	6.06%	30.70%	13.62%	0.00%	0.00%	0.00%	0.00%	6.70%	0.01	0.07	0.03	0.00	0.00	0.00	0.00	0.02
PreCleaner	6.37	0.03580	1.375	0.00%	14.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00
Contact Adhesive	8.2	0.00808	1.375	0.00%	0.00%	0.00%	0.00%	35.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00
Spray' Go Paint	6.088	0.00200	1.375	10.00%	5.00%	10.00%	3.00%	0.00%	0.00%	0.00%	0.00%	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Sta-Put Adhesive	6.505	0.00444	1.375	0.00%	0.00%	0.00%	0.00%	35.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00
New Paint Shop																			
Reducer	7.21	0.05280	1.375	0.00%	8.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00
Hardener	7.84	0.00350	1.375	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stabilizer	7.25	0.07170	1.375	0.00%	27.00%	26.00%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.85	0.81	0.16	0.00	0.00	0.00	0.00
7000 Base	9.2	0.12200	1.375	7.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cabinet Shop Paint Booth																			
Bull's Eye	11	0.00358	1.375	0.00%	0.00%	0.00%	0.00%	0.00%	2.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total State Potential Emissions												**0.96**	**1.79**	**1.17**	**0.16**	**0.20**	**0.00**	**0.00**	**0.02**

METHODOLOGY

Total HAPs = **4.30**

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Appendix A: Emissions Calculations
VOC and Particulate
From Paint Prep Shop (Old Paint Shop)

Company Name: Forest River, Incorporated
Address City IN Zip: 58277 State Road 19 South & 27824 County Road 20, Elkhart, IN 46517
CP: 039-10341
Plt ID: 039-00295
Reviewer: NH/EVP

Paint Prep Shop (Old Paint Shop) Emissions

	1	lb putty/RV x	1.375	RV/hr =	**1.375**	**lb/hr**			
PM/PM10		1.375	lb/hr x	8760	hr/yr /	2000	lb/ton =	**6.02**	**tons/yr**

Allowable PM/PM10 emissions

4.1	x (	15.8	tons/hr) ^	0.67	
	=	**26.05**	**lbs PM/hr**		
	=	**114.12**	**tons PM/yr**		

Potential emissions are less than the allowable emissions, thus the source will comply with 326 IAC 6-3-2

Appendix A: Emissions Calculations
Process Particulate Emissions from Cabinet Shop (Woodworking)

Company Name: Forest River, Inc. - Cardinal Division
Address City IN Zip: 58277 State Road 19 & 27824 County Road 20, Elkhart, IN 46517
CP: 039-10341
Plt ID: 039-00295
Reviewer: NH/EVP

PM/PM10:	0.04 gr/acf outlet	4200 acf/min x	60 min/hr /	7000 gr/lb x	4.38 ton/yr / lb/hr	**63.07 tons/yr (uncontrolled)**
	where the baghouse control efficiency is listed a	90.00%				**6.31 tons/yr (controlled)**

Company Name: Forest River, Inc. - Cardinal Division
Address City IN Zip: 58277 State Road 19 & 27824 County Road 20, Elkhart, IN 46517
Permit No./Plt ID: 039-10341-00295
Reviewer: NH/EVP

PROCESS WELDING	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS * (lb pollutant / lb electrode) PM = PM10	 Mn	 Ni	 Cr	EMISSIONS (lb/hr) PM = PM10	 Mn	 Ni	 Cr	TOTAL HAPS (lb/hr)
Metal Inert Gas (MIG)(ER70S)	5	5.75575		0.0052	0.00032	0.0001	0.0001	0.150	0.009	0.003	0.003	0.015
Stick (E7018 electrode)	1	4.66125		0.0211	0.0009	--	--	0.098	0.004	0.000	0.000	0.004
EMISSION TOTALS								PM = PM10	Mn	Ni	Cr	Total HAPs
Potential Emissions lbs/hr								0.25	0.01	0.00	0.00	0.02
Potential Emissions lbs/day								5.95	0.32	0.00	0.07	0.46
Potential Emissions tons/year								**1.09**	0.06	0.00	0.01	0.08

METHODOLGY

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column. Consult AP-42 or other reference for different electrode types.
Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)
Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)
Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day
Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/day x 1 ton/2,000 lbs.
Plasma cutting emission factors are from the American Welding Society study published in Sweden (March 1994).
Welding and other flame cutting emission factors are from an internal training session document.
See AP-42, Chapter 12.19 for additional emission factors for welding.